

CLAIMS

What is claimed is:

- 1 1. A voltage regulation circuit, comprising:
2 a current sense circuit including a current sense terminal to conduct a
3 current to be sensed by the current sense circuit, wherein a voltage difference
4 between the current sense terminal and a voltage reference terminal is
5 substantially fixed when the current to be sensed by the current sense circuit is
6 substantially equal to a first current sense threshold;
7 a first impedance coupled between the current sense terminal and the
8 voltage reference terminal to provide a second current sense threshold, wherein
9 the second current sense threshold is equal to a sum of the first current sense
10 threshold and a current to flow through the first impedance; and
11 a second impedance coupled between the current sense terminal and an
12 input terminal of the voltage regulation circuit, wherein the input terminal has a
13 voltage threshold relative to the voltage reference terminal that is different from a
14 voltage at the current sense terminal by an amount that is a product of the second
15 impedance and the second current threshold.
- 1 2. The voltage regulation circuit of claim 1 wherein the first
2 impedance comprises a first resistor.

1 3. The voltage regulation circuit of claim 1 wherein the second
2 impedance comprises a second resistor.

1 4. The voltage regulation circuit of claim 1 wherein the second
2 impedance comprises a second resistor coupled in parallel with a capacitor.

1 5. The voltage regulation circuit of claim 1 wherein the current sense
2 circuit includes a digital output, wherein the digital output is in a first state when
3 the voltage at the input terminal is above the voltage threshold, wherein the digital
4 output is in a second state when the voltage at the input terminal is below the
5 voltage threshold.

1 6. The voltage regulation circuit of claim 1 wherein the current sense
2 circuit includes a digital output, wherein the digital output is in a first state when
3 the voltage at the input terminal is above the voltage threshold by more than an
4 upper hysteresis offset voltage, wherein the digital output is in a second state
5 when the voltage at the input terminal is below the voltage threshold by more than
6 a lower hysteresis offset voltage.

1 7. The voltage regulation circuit of claim 1 wherein the voltage at the
2 input terminal is representative of a voltage to be regulated by the voltage
3 regulation circuit.

1 8. The voltage regulation circuit of claim 7 wherein the voltage
2 regulation circuit is included in a power supply circuit.

1 9. The voltage regulation circuit of claim 8 wherein the voltage to be
2 regulated is derived from at least one output of the power supply circuit.

1 10. The voltage regulation circuit of claim 8 wherein the power supply
2 is an AC/DC power supply.

1 11. The voltage regulation circuit of claim 8 wherein the power supply
2 is a DC/DC power supply.

1 12. The voltage regulation circuit of claim 8 wherein the power supply
2 is an isolated power supply.

1 13. The voltage regulation circuit of claim 8 wherein the power supply
2 is a non-isolated power supply.

1 14. The voltage regulation circuit of claim 1 wherein the current sense
2 terminal and the voltage reference terminal are terminals of an integrated circuit.

1 15. The voltage regulation circuit of claim 14 wherein the integrated
2 circuit further comprises a power transistor.

1 16. The voltage regulation circuit of claim 14 wherein the integrated
2 circuit is a monolithic integrated circuit.